ITU Assistance to ASP countries in DTT transition

ITU Assistance to countries

❑ ITU assisted a number of Member countries in developing roadmap for transition from analogue to digital broadcasting

❑ More than 40 countries since 2009 for establishing national goals, strategies, key activities and so forth

- Africa Region: e.g. Angola, Ethiopia, Mali, Gabon, DRC, Equatorial Guinea

- ASP Region: Bangladesh, Bhutan *(also an update)*, Cambodia, Fiji, Indonesia, Lao PDR, Maldives, Micronesia, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand, Timor-Leste, Tonga *(also revision of the roadmap)*, Vanuatu, Vietnam, Afghanistan, Kiribati, Nauru, Samoa and Solomon Islands

- AMS: CAF project and ITU budget: 12 countries

- Palestine

- Also from BDT's direct assistance program

ITU Assistance to ASP Region countries

- ❑ ITU assisted a number of Member countries in ASP region developing roadmap for transition from analogue to digital broadcasting

- ❑ More than 20 countries since 2009 for establishing national goals, strategies, key activities and so forth

  - ❑ Afghanistan, Bangladesh, Bhutan *(also an update)*, Cambodia, Fiji, Indonesia, Kiribati, Lao P.D.R, Maldives, Micronesia, Mongolia, Myanmar, Nauru, Nepal, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga *(also revision of the roadmap)*, Vanuatu, Vietnam

- ❑ Mongolia carried out ASO in 2015

ITU DSO database

- *Council May 2014, request from Kenya*
- ➢ ITU to provide an analogue to digital switchover stocktaking for assisting the Member States in their migration process.
- *Circular Letter BDT/IEE/SBD/DM/014 from the BDT Director (23 February 2015)*
- ➢ Given the dynamically changing status of the Digital Terrestrial Television (DTT) deployment and in order to enable all administrations to benefit from the latest status and information concerning the Digital migration, Administrations are invited to make the necessary update to ensure that their actual status and data are correctly reflected on the portal.
- *Circular Letter BDT/IEE/TND/016 from the BDT Director (12 February 2019)*
- ➢ After the deadline set by the GE-06 conference, and in order to enable all administrations to benefit from the latest status and information, ITU is updating the database on the digital Terrestrial Television broadcasting transition. For this reason, Administrations are asked to provide and update their information using the web portal

https://www.itu.int/en/ITU-D/Spectrum-Broadcasting/DSO/Pages/default.aspx

From ITU DSO database

Country	Year of Launch	ASO Date	TV Standard	Compression Format	Status
Afghanistan			ND		No Information
Australia	2001	10/12/2013	DVB-T	MPEG-2	Completed
Bangladesh		2016	DVB-T2	MPEG-4	Not Started
Bhutan	2018	01/01/2019	DVB-T2	MPEG-4	Ongoing
Brunei Darussalam		2015	DVB-T		No Information
Cambodia		2020	DVB-T, DVB-T2, DTMB	MPEG-4	Ongoing
China		2018	DTMB		No Information
Dem. People s Rep. of Korea					No Information
Fiji	2015	2018	DVB-T2	MPEG-4	Ongoing
India		2015	DVB-T, DVB-T2		Ongoing
Indonesia	2012	2020	DVB-T2	MPEG-4	Ongoing
Iran (Islamic Republic of)	2009		DVB-T		Ongoing
Japan	2003	2011	ISDB-T	MPEG-2, MPEG-4	Completed
Kiribati		2017	ND		No Information
Korea (Rep. of)	2001	2012	ATSC	MPEG-2	Completed
Lao P.D.R.		2020	DVB-T, DTMB		No Information
Malaysia	2016	2018	DVB-T2		Not Started
Maldives		2020	DVB-T2, ISDB-T		No Information
Marshall Islands	2010		DVB-T	MPEG-2	Completed
Micronesia			ND		No Information
Mongolia	2014	05/10/2015	DVB-T2	MPEG-4	Completed
Myanmar	2013	2020	DVB-T2	MPEG-4	Ongoing
Nauru			ND		No Information
Nepal (Republic of)		2017	DVB-T2		No Information
New Zealand	2008	2013	DVB-T, DVB-T2	MPEG-4	Completed
Niue					No Information
Pakistan					No Information
Palau					No Information
Papua New Guinea	2014	2017	DVB-T2	MPEG-4	Ongoing
Philippines	2017	2023	ISDB-T	MPEG-4	Ongoing
Samoa	2014	2017	DVB-T2	MPEG-4	Ongoing
Singapore		2015	DVB-T, DVB-T2		No Information
Solomon Islands			ND		No Information
Sri Lanka		2017	DVB-T2, ISDB-T		No Information
Thailand	2014	2020	DVB-T2	MPEG-4	Ongoing
Timor-Leste		2024	ND		No Information
Tonga		15/06/2014	DVB-T2		No Information
Tuvalu					No Information
Vanuatu		2017	DVB-T2		No Information
Viet Nam	2010	31/12/2020	DVB-T, DVB-T2	MPEG-2, MPEG-4	Ongoing

ASO in ASP countries

- Japan - 2011

- Korea (Rep. of) - 2012

- Australia – Dec 2014

- New Zealand - 2014

- Mongolia - Oct 2015

- Marshall Islands

Standards for DTT

Standard	Modulation	Description in Report ITU-R BT.2140[6]	Recommendation ITU-R BT.1306[7]	Applicable standards
ATSC	Single carrier 8-VSB	Brief: part 1 section 2.6.2.1 Detailed: part 2, section 1.5	System A; annex 1 table 1a	A/52,A/53, A/65, A/153
DTMB (also referred to as ChinaDTV)	Multi carrier OFDM	Brief: part 1, section 2.6.2.2 Detailed: -	-	GB 20600-2006
DVB-T	Multi carrier OFDM	Brief: part 1, section 2.6.2.4 Detailed: part 2, section 1.6	System B; annex 1 table 1b	EN 300 744
ISDB-T	Multi carrier Segmented OFDM	Brief: part 1, section 2.6.2.5 Detailed: part 2, section 1.8	System C; annex 1 table 1c	ARIB STD-B31 ABNT NBR 15601

[Source: Guidelines for the Transition from Analogue to Digital Broadcasting", ITU, page.186, 2010. Please study reports from the ITU website - http://www.itu.int/publ/D-HDB-GUIDELINES.01-2010/en]

DTTB standards adopted by ASP countries

- DVB T Australia, in legacy of MPEG-2

- DVB T2 Singapore, PNG, Mongolia, India, Vietnam, ..

- DVB T & DVB T2 New Zealand, Myanmar,

- ISDB T - Japan, Philippines, Maldives, Sri Lanka

- DTMB - China, Hong Kong, Macau

- DVB T2 & DTMB – Cambodia, Lao

- No decision – Timor Leste, Micronesia, Nauru

- Follow the region -   Kiribati DVB-T2

Two common models

Broadly, there are two models considered for all ITU assisted road maps as per ITU guidelines; Model A and Model B.

- For Model A, the broadcasters would be free to adopt any business model. For the DTTB services this is basically the choice between pay-tv services or FTA services (or any combination). It is recommended to set standards for the CA system.

- Model B is more prescriptive and study teams recommended that National Roadmap Teams have to develop a business model in collaboration with the common multiplex operator and industry. This model was applied in countries like Germany, Sweden and Sri Lanka.

Summary of TV market in the beneficiary countries

❑ TV market in each of the countries is quite different to each other. This is mainly driven by population, economic development and disposable income, cultural, social and geography of each country.

Objectives for the ASO & DSO

❑ Some of the common objectives among beneficiary countries are:

- An increase in the capacity of broadcast transmission networks by improving spectrum efficiency (i.e. more data can be transmitted per unit bandwidth).

- Provision of better signal quality which increases robustness to interference and picture degradation.

- The ability to support HD services and interactivity.

- A potential reduction in transmission network energy usage.

- The implementation of single frequency networks (SFNs) instead of the independent parallel networks which are common in analogue broadcasting.

Objectives for the ASO & DSO

❑ In addition there are other factors that drive DSO

- The take-up of digital TV is likely to boost sales of TV sets and digital video recorders.

- Digital TV could lead to positive upstream benefits in terms of increased time spent watching TV and greater demand for digital content.

- In a competitive multi-channel, multi-platform environment, DTT provides opportunities for terrestrial broadcasters to address the challenges posed by pay TV operators and the Internet.

Key Findings and Recommendations

- Among the countries which received ITU assistance, only one country has completed ASO and others are progressing slowly.

- There are a number of challenges in digital migration.

Challenges in digital migration

1.   **The costs involved and the enormity of task**

For certain countries with larger geographies and wide spread population, the deployment of the transmission networks are capital intensive. Having a large transmission network, from hundreds to in some cases over a thousand of analogue transmitter sites, converting these to digital and in a reasonable time period is seen as a challenging task. Not only does the setup of infrastructure for digital but also carrying out a simulcast service for a given period involve a lot of money and resources. On top of these the need to subsidise set- top-boxes to masses is an additional burden.

2.   **Not seen as a national priority**

Many governments still do not see the move to digital as a priority hence the move is not fully endorsed or supported by the necessary authorities and the necessary initiative and push is not available.

Challenges in digital migration

3.   **Lack of cooperation among stakeholders**

In many countries the move to digital is not initiated as a collective effort by all the stakeholders involved. This includes public as well as private broadcasters, regulators and others. This is also partly connected to the previous point on government priority areas.

4.   **Technology standards and ever evolving technologies**

The technologies are evolving at a rapid pace. Digital terrestrial transmission technologies are matured with a number of providers and supporters readily available. However, there are still cases where some still feel it may be better to wait for the next technology or next standard. But many of the experts have already shared their views that a major change or upgrade is not possible as current standards are providing performances close to the theoretical limits in current form. In some countries there is still the debate on which Digital Terrestrial Television Broadcasting (DTTB) standard to choose from DVB-T2, ISDB-T, ATSC or DTMB.

Challenges in digital migration

5. **Spectrum is not an issue for certain countries**

This means that the benefits of digital dividend can immediately be initiated. It is not necessary for broadcasters to vacate the spectrum for government to explore these benefits. This leads to no drive or initiative from policy makers and authorities.

6. **Availability of alternate options other than terrestrial TV**

In certain countries, Direct to Home (DTH) services from the satellite and cable services have gone digital and are readily available especially in main cities and population centres at reasonable costs. These options provide many of the benefits of that digital could offer to viewers. Hence, there is little demand for digital terrestrial from the public which makes digital terrestrial propositions being delayed.

Recommendations to stakeholders

- DSO works well when Governments are committed

- Legislative and regulatory framework

- Close coordination among stakeholders

- Need a driver such as content - appealing to audience

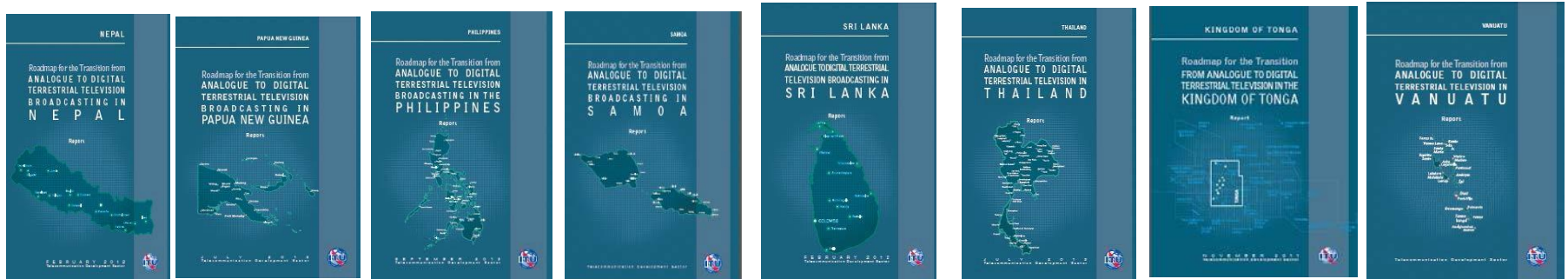- Financial incentives to introduction

Roadmaps

- National Roadmaps for Transition from Analogue to Digital Terrestrial Television Broadcasting (24 countries in the APAC region, **10 in Pacific**)

Cambodia	**Fiji**	Indonesia	Lao PDR	Maldives	**Micronesia**	Mongolia	Myanmar

Nepal	**Papua New Guinea**	Philippines	**Samoa**	Sri Lanka	Thailand	**Tonga**	**Vanuatu**

- **Afghanistan**
- **Bangladesh**
- Bhutan
- **Kiribati**
- **Nauru**
- **Solomon Islands**
- **Timor Leste**
- Viet Nam

Thank you for your attention